



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,945	09/09/2003	James T. King	KING.UTL	1610
21590	7590	10/19/2005	EXAMINER	
MYERS & KAPLAN INTELLECTUAL PROPERTY LAW, LLC 1899 POWERS FERRY ROAD, SUITE 310 ATLANTA, GA 30339			DABNEY, PHYLESHEA LARVINIA	
			ART UNIT	PAPER NUMBER
			2646	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,945

Applicant(s)

KING, JAMES T.

Examiner

Phylesha L. Dabney

Art Unit

2646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-8, 10-16 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8, 10-13, 15 and 21 is/are rejected.
- 7) ☒ Claim(s) 14 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to the amendment received on 14 July 2005 in which claims 2-8, 10-16, and 21 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2-6, 8, 10, 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Lucey et al (U.S. Patent No. 5,410,608).

Regarding independent claim 5, Lucey teaches a hearing aid (figs. 1-3) comprising: a main body (fig. 1) having a forward end (near 14) and a rear end (near 20); a forward face (figs. 2-3) having an upper surface; a speaker (18) oriented in the rear end; a microphone element (30) oriented in the forward face; and a boundary button (40) connected to the forward face and oriented over and generally parallel to the microphone, and wherein the microphone element has a diameter and the boundary button has a diameter.

Regarding claim 2, Lucey teaches legs (42a-c) connected between a lower surface of the boundary button and the upper surface of the forward face.

Regarding claim 3, Lucey teaches a space (H1) formed between the forward face and the boundary button, the width of the space generally being defined by the length of the legs.

Regarding claim 4, Lucey inherently teaches the space is a pressure zone in that the

Art Unit: 2646

distance (H1) of the boundary button the matched impedance and tuning of the rear cavity (26; col. 4 lines 44-51 and lines 65-68) .

Regarding claim 6, Lucey teaches the diameter of the boundary button is larger than the diameter of the microphone element (fig. 3).

Regarding claim 8, Lucey teaches the forward end of the microphone element is oriented flush with the upper surface (28) of the forward face.

Regarding independent claim 12 and dependent claim 13, Lucey teaches a microphone, comprising: a first boundary (fig. 2) having a first surface; a microphone pressure membrane (30) oriented in the boundary generally flush with the first surface; and a second boundary (40) generally parallel to the first boundary, the second boundary being oriented directly in front of the membrane and parallel to the membrane, and wherein the first boundary has a diameter greater than the diameter of the second boundary.

Regarding claim 10, Lucey teaches legs (40a-c) connected between the first surface and the second boundary.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 11, 15, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lucey.

Regarding claim 7, Lucey does not specifically teach that the diameter of the boundary button is twice the diameter of the microphone element, but Lucey does allow the diameter of the boundary button to be changed to any value including twice the size of the microphone element (col. 5 lines 17-28) for optimizing the acoustic performance. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to increase the diameter of the boundary button relative to the diameter of the microphone element to any value including two for achieving optimal performance.

Regarding claims 11, Lucey does not specifically teach that the legs space the first and second boundaries to create a high frequency cut-off of the microphone. However, Lucey does allow the height of the boundary button legs to be changed to any value (col. 5 lines 17-28) for optimizing the acoustic performance and frequency response (col. 5 lines 34-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that by adjusting the height value, the acoustic performance and optimized cut-off frequency responses would be achieved.

Regarding claim 15, Lucey does not specifically teach that the diameter of the second boundary creates a low frequency cut-off. Lucey does allow the diameter of the second to be changed to any value (col. 5 lines 17-28) for optimizing the acoustic performance and frequency response (col. 5 lines 34-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the diameter of the second boundary for achieving optimal cut-off frequency responses.

Regarding claim 21, Lucey teaches a hearing aid kit, comprising: a hearing aid (fig. 1) having a forward face and a microphone (30) oriented in the forward face; and a boundary button

Art Unit: 2646

(40) adapted to be connected to the forward face (28); wherein the forward face is a first boundary, the microphone being positioned in the first boundary flush to the first boundary; wherein the boundary button is a second boundary, the second boundary being adapted to create a pressure zone between the microphone and the second boundary when the boundary button is mounted on the forward face.

Lucey does not specifically teach that the distance between the microphone and the boundary button determines the high frequency cut off of the microphone; and wherein the relationship of the diameters of the boundary button and the microphone determine the low frequency cutoff of the microphone. However, Lucey does allow the height of the boundary button legs and the diameter of the boundary button to be changed to any value (col. 5 lines 17-28) for optimizing the acoustic performance and frequency response (col. 5 lines 34-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that by adjusting the diameter and height values, the acoustic performance and optimized cut-off frequency responses would be achieved.

Allowable Subject Matter

Claims 14 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to the claims has been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phylesha L. Dabney whose telephone number is 571-272-7494. The examiner can normally be reached on Mondays, Tuesdays, Wednesdays, Fridays 8:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 12, 2005

PLD


SINH TRAN
SUPERVISORY PATENT EXAMINER